Complete Summary

GUIDELINE TITLE

General nutrition, weight loss, and wasting syndrome.

BIBLIOGRAPHIC SOURCE(S)

New York State Department of Health. General nutrition, weight loss, and wasting syndrome. New York (NY): New York State Department of Health; 2004 Mar. 21 p. [35 references]

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Human immunodeficiency virus (HIV)-associated weight loss and wasting syndrome

GUIDELINE CATEGORY

Evaluation
Management
Treatment

CLINICAL SPECIALTY

Allergy and Immunology
Family Practice
Infectious Diseases

Internal Medicine
Nutrition

INTENDED USERS

Advanced Practice Nurses
Dietitians
Health Care Providers
Nurses
Physician Assistants
Physicians
Public Health Departments

GUIDELINE OBJECTIVE(S)

To provide guidelines for the management of human immunodeficiency virus (HIV)-associated weight loss and wasting syndrome

TARGET POPULATION

Human immunodeficiency virus (HIV)-infected patients experiencing weight loss

INTERVENTIONS AND PRACTICES CONSIDERED

Evaluation

1. Assessment of highly active antiretroviral therapy (HAART) regimen
2. History and physical examination including assessment of signs and symptoms such as fatigue, weakness, muscle wasting, orthostatic hypotension, polyuria, diarrhea and others
3. Assessment of body composition including
    - Measuring and recording patient's weight at each visit
    - Accurate assessment of body composition including body cell mass (BCM), extracellular material (EM), lean body mass, and fat compartment (Fat)
4. Assessment of nutritional status by a registered dietitian
5. Evaluation for causes of decreased nutrient intake such as neoplasms, stomatitis, esophagitis, opportunistic infections, medication toxicity
6. Evaluation for malabsorption by 3-day fecal fat measurement, D-xylose absorption studies, and jejunal or colon biopsy
7. Measurement of total and free testosterone levels
8. Assessment for fat redistribution and lipoatrophy syndromes

Management/Treatment

1. Treatment of conditions underlying human immunodeficiency virus (HIV)-associated weight loss
2. Multivitamin supplements containing selenium
3. Appetite stimulants such as megestrol acetate and dronabinol
4. Considering a change in HAART regimen in patients with non-infectious diarrhea

5. Progressive resistance exercise (PRE)
6. Anabolic steroids such as oxandrolone and nandrolone after excluding specific endocrine abnormalities
7. Androgenic anabolic steroids such as testosterone
8. Recombinant human growth hormone (rhGH)
9. Management of wasting syndrome with total parenteral nutrition (TPN), if indicated, and frequent assessment of electrolytes and blood glucose in the first several weeks of re-feeding

MAJOR OUTCOMES CONSIDERED

- Effectiveness of treatment of human immunodeficiency virus (HIV)-associated weight loss
- Adverse effects of medications

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus (Committee)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

AIDS Institute clinical guidelines are developed by distinguished committees of clinicians and others with extensive experience providing care to people with HIV infection. Committees* meet regularly to assess current recommendations and to write and update guidelines in accordance with newly emerging clinical and research developments.

The Committees* rely on evidence to the extent possible in formulating recommendations. When data from randomized clinical trials are not available, Committees rely on developing guidelines based on consensus, balancing the use of new information with sound clinical judgment that results in recommendations that are in the best interest of patients.

* Current committees include:

- Medical Care Criteria Committee
- Committee for the Care of Children and Adolescents with HIV Infection
- Dental Standards of Care Committee
- Mental Health Committee
- Women's Health Committee
- Substance Use Committee
- Physician's Prevention Advisory Committee
- Pharmacy Committee

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

All guidelines developed by the Committee are externally peer reviewed by at least two experts in that particular area of patient care, which ensures depth and quality of the guidelines.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The clinician should ensure that patients with human immunodeficiency virus (HIV)-associated weight loss are receiving effective antiretroviral (ARV) therapy.

Key Point:

Weight loss is a symptom that warrants a carefully executed diagnostic evaluation for correctable or treatable confounding conditions.

Assessment of Body Composition

The clinician should measure and record the weight of HIV-infected patients at each visit.

For the purposes of this guideline, the following definitions concerning body composition will be used:

- Body weight (BW) is the total mass constituting all cellular and non-cellular components and can be simply measured by an office scale.
- The body cell mass (BCM) includes all non-adipose cells as well as the aqueous compartments of the fat cells.
- The fat compartment (Fat) represents the non-aqueous component of adipocytes.
- The lean body mass (LBM) represents the BCM and extracellular material (EM) exclusive of fat.

The body composition compartments relate as follows:

BW = BCM + EM + Fat

LBM = BCM + EM

Key Point:

The clinician should be vigilant for HIV-associated malnutrition, even in patients who appear to be maintaining their usual body weight. Weighing the patient should not be the sole method used to detect nutritional deficiencies.

Refer to Table 1 in the original guideline document for information on clinical determination of changes in body composition.

Assessing Nutritional Status

A careful nutritional assessment should be conducted by a registered dietitian for any patient who has involuntary weight loss of at least 5% of the usual body weight (UBW), demonstrates clinical evidence of LBM loss, or follows a restrictive diet involving major food groups.

Key Point:

A thorough medical history and a focused physical examination are the most valuable tools in assessing nutritional status.

Energy Expenditure

Key Point:

Resting energy expenditure in all stages of HIV/acquired immunodeficiency syndrome (AIDS) may be increased by >10% when compared with non-HIV-infected individuals.

Weight Loss

Pathophysiology

Decreased Nutrient Intake

When patients present with dysphagia or odynophagia, the clinician should evaluate for causes of neoplasms, stomatitis, and/or esophagitis, especially when the patient's CD4 count is <200 cells/mm^3.

After active opportunistic diseases have been excluded in patients with voluntary restricted caloric intake, clinicians should consult with or refer the patient to a dietitian, psychiatrist/psychologist, or social worker.

Key Point:

Dietary restrictions for some highly active antiretroviral therapy (HAART) regimens pose significant barriers to adequate caloric intake and good nutrition. It may be necessary to consider a change in HAART under these circumstances (see Table 2 in the original guideline document for manufacturer's guidelines combining antiretroviral medication and food).

Decreased Nutrient Absorption

For all patients with chronic diarrhea, the clinician should examine for and treat gastrointestinal opportunistic infections (*Mycobacterium avium* complex, bacterial pathogens such as *Salmonella*, *Cryptosporidium*, microsporidia, *Isospora*, *Giardia*, *Entamoeba*, *Clostridium difficile*), as well as assess for ARV-induced diarrhea.

The clinician should evaluate patients with chronic diarrhea in the setting of weight loss for malabsorption by 3-day fecal fat measurement, D-xylose absorption studies, and jejunal and/or colon biopsy.

Disturbances of Metabolism

The clinician should perform a comprehensive medical evaluation when rapid unintentional weight loss (≥10% of the UBW) occurs over weeks to months because it is frequently associated with a life-threatening opportunistic infection or neoplasm.

Clinicians should consider measuring total and free testosterone levels in all HIV-infected men with changes in libido, loss of LBM, or fatigue.

Key Point:

Because women lose a disproportionate amount of body fat at all stages of HIV infection, malnutrition should be suspected in women demonstrating fat loss.

Key Point:

When weight loss is associated with profound fatigue, postural hypotension, hyperkalemia and/or hyponatremia, clinicians should consider adrenal insufficiency, especially in cases of disseminated *M. avium* complex and cytomegalovirus (CMV) infection.

Management of Gradual HIV-Associated Weight Loss

Nutritional Supplementation

Although nutritional supplementation is indicated for all patients with weight loss, the clinician should not supplement caloric intake without first addressing reversible causes of weight loss.

Clinicians should recommend the use of "once daily" multivitamin supplements containing selenium (20 to 40 micrograms) for all HIV-infected patients experiencing weight loss.

Clinicians should not recommend high-dose vitamin therapy because this might exacerbate pre-existing gastrointestinal dysfunction and/or anorexia.

Clinicians should consider medical conditions, such as pancreatitis, diabetes mellitus, or renal insufficiency, in planning macronutrient balances.

Treatment of Anorexia

When patients present with anorexia, clinicians should perform a careful review of the medication list to determine whether the anorexia is medication-induced.

Treatment of Non-Infectious Diarrhea

When recalcitrant diarrhea occurs as a complication of HAART, clinicians should consider a change in therapy if suitable alternatives with a high likelihood of successful viral suppression are available (based on HIV resistance testing).

The Role of Exercise

Clinicians should advise patients to participate in a fitness program that uses progressive resistance exercise (PRE).

Anabolic Steroids

Clinicians should exclude specific endocrine abnormalities, such as hypothalamic hypogonadism and hyperthyroidism, before prescribing oxandrolone.

Clinicians should monitor for hypogonadism in eugonadal men who are receiving long-term nandrolone or oxandrolone.

Androgenic Anabolic Steroids

Clinicians should consider short-term (several months) testosterone therapy with supraphysiologic doses, in conjunction with PRE, to achieve BCM increase in selected male patients demonstrating a rapid rate of muscle loss.

Because androgenic anabolic steroids cause virilization, a general recommendation for their use in women cannot be made until further studies have been completed.

Because androgen enhances libido, clinicians should strongly reinforce safer sexual practices for patients receiving androgenic anabolic steroids.

Recombinant Human Growth Hormone

Clinicians should consider prescribing a 12-week course of recombinant human growth hormone (rhGH) after hypogonadism and active opportunistic diseases have been excluded.

Clinicians should discontinue rhGH treatment if no weight gain is observed after the initial 3 to 4 weeks of therapy.

If weight loss continues despite several weeks of rhGH therapy, the clinician should re-evaluate for co-existent opportunistic infections.

The Wasting Syndrome

Clinicians should perform a detailed evaluation for opportunistic infections or malignancies in all patients with wasting syndrome.

Nutritional Intervention in the Wasting Syndrome

The clinician should perform an immediate evaluation to determine the cause of the wasting syndrome.

For patients with conditions that prevent enteral feeding, total parenteral nutrition (TPN) may be indicated for short-term management.

The clinician should monitor supplementation with micronutrients by frequently assessing serum electrolytes and blood glucose in the first several weeks of re-feeding.

Fat Redistribution (Lipodystrophy) Syndromes

Key Point:

Clinicians should consider the possibility of concurrent lactic acidosis and/or hepatic dysfunction in patients with lipoatrophy.

CLINICAL ALGORITHM(S)

Clinical algorithms are provided in the original guideline document for:

- Management of Gradual Weight Loss in the HIV-Infected Patient
- Management of Wasting Syndrome

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence supporting the recommendations is not specifically stated.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate evaluation and management of weight loss in HIV-infected individuals

POTENTIAL HARMS

Bioelectric impedance analysis (BIA) can lead to misinterpretation of body composition when there are significant volume shifts or regions of active inflammation.

Adverse Effects of Medications

- *Megestrol acetate* may decrease testosterone levels and may cause impotence. There is also risk of thromboembolism and adrenal insufficiency.
- Patients taking *dronabinol* may not tolerate central nervous system effects
- *Oxandrolone* and *nandrolone* have a relatively low potential for hepatic toxicity. Long-term use in eugonadal men requires monitoring for hypogonadism.
- Unwanted side effects of *testosterone* include acne, accelerated hair loss, behavioral changes, and local irritation from testosterone transdermal patch. Testosterone can also cause prostate cancer and hepatic toxicity, including cholestasis, peliosis hepatitis, and primary hepatic carcinoma. A natural consequence of exogenous testosterone is testicular atrophy, if not already present. There is a potential for steroid abuse. There is also epidemiologic evidence implicating androgenic steroids as a promoter of Kaposi's sarcoma (KS) in the setting of acquired immunodeficiency syndrome (AIDS).
- Adverse effects of *recombinant human growth hormone (rhGN)* include muscle and joint pain, carpal tunnel syndrome, peripheral neuropathy, peripheral edema, hyperglycemia, and pancreatitis.

Refer to Appendix A in the original guideline document for information on adverse effects of other drugs used for treatment of HIV-associated weight loss.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

The AIDS Institute's Office of the Medical Director directly oversees the development, publication, dissemination and implementation of clinical practice guidelines, in collaboration with The Johns Hopkins University, Division of Infectious Diseases. These guidelines address the medical management of adults, adolescents and children with HIV infection; primary and secondary prevention in medical settings; and include informational brochures for care providers and the public.

Guidelines Dissemination

Guidelines are disseminated to clinicians, support service providers and consumers through mass mailings and numerous AIDS Institute-sponsored educational programs. Distribution methods include the HIV Clinical Resource website, the Clinical Education Initiative, the AIDS Educational Training Centers (AETC) and the HIV/AIDS Materials Initiative. Printed copies of clinical guidelines are available for order from the NYSDOH Distribution Center for providers who lack internet access.

Guidelines Implementation

The HIV Clinical Guidelines Program works with other programs in the AIDS Institute to promote adoption of guidelines. Clinicians, for example, are targeted through the Clinical Education Initiative (CEI) and the AIDS Education and Training Centers (AETC). The CEI provides tailored educational programming on site for health care providers on important topics in HIV care, including those addressed by the HIV Clinical Guidelines Program. The AETC provides conferences, grand rounds and other programs that cover topics contained in AIDS Institute guidelines.

Support service providers are targeted through the HIV Education and Training initiative which provides training on important HIV topics to non-physician health and human services providers. Education is carried out across the State as well as through video conferencing and audio conferencing.

The HIV Clinical Guidelines Program also works in a coordinated manner with the HIV Quality of Care Program to promote implementation of HIV guidelines in New York State. By developing quality indicators based on the guidelines, the AIDS Institute has created a mechanism for measurement of performance that allows providers and consumers to know to what extent specific guidelines have been implemented.

Finally, best practices booklets are developed through the HIV Clinical Guidelines Program. These contain practical solutions to common problems related to access,

delivery or coordination of care, in an effort to ensure that HIV guidelines are implemented and that patients receive the highest level of HIV care possible.

IMPLEMENTATION TOOLS

Clinical Algorithm
Personal Digital Assistant (PDA) Downloads

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

New York State Department of Health. General nutrition, weight loss, and wasting syndrome. New York (NY): New York State Department of Health; 2004 Mar. 21 p. [35 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2004 Mar

GUIDELINE DEVELOPER(S)

New York State Department of Health - State/Local Government Agency [U.S.]

SOURCE(S) OF FUNDING

New York State Department of Health

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available from the New York State Department of Health AIDS Institute Web site.

AVAILABILITY OF COMPANION DOCUMENTS

This guideline is available as a Personal Digital Assistant (PDA) download from the New York State Department of Health AIDS Institute Web site.

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI Institute on September 10, 2007.

COPYRIGHT STATEMENT

This NGC summary is based on the original guideline, which is copyrighted by the guideline developer. See the New York State Department of Health AIDS Institute Web site for terms of use.

DISCLAIMER

NGC DISCLAIMER

The National Guideline Clearinghouse™ (NGC) does not develop, produce, approve, or endorse the guidelines represented on this site.

All guidelines summarized by NGC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public or private organizations, other government agencies, health care organizations or plans, and similar entities.

Guidelines represented on the NGC Web site are submitted by guideline developers, and are screened solely to determine that they meet the NGC Inclusion Criteria which may be found at http://www.guideline.gov/about/inclusion.aspx .

NGC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or clinical efficacy or effectiveness of the clinical practice guidelines and related materials represented on this site. Moreover, the views and opinions of developers or authors of guidelines represented on this site do not necessarily state or reflect those of NGC, AHRQ, or its contractor ECRI Institute, and inclusion or hosting of guidelines in NGC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding guideline content are directed to contact the guideline developer.

© 1998-2008 National Guideline Clearinghouse

Date Modified: 10/6/2008